
ENVIRONMENTAL Fact Sheet



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Asbestos Management Facts for Fire Department Personnel

General

Asbestos is a naturally occurring mineral which, when mined and reduced to a state of microscopic sized fibers for processing, has been commercially utilized in the manufacture of a variety of familiar products. However, based on the results of a number of health studies, it is recognized that asbestos can endanger human health. The inhalation of asbestos fibers is known to cause a debilitating and irreversible respiratory illness known as asbestosis, as well as lung cancer and mesothelioma cancer. The latency period associated with these diseases can involve several decades.

Because inhalation is the exposure route of concern, it is important to prevent asbestos fibers from becoming airborne, being directly contacted, or entering surface waterways for deposit at remote locations. Proper control of these issues is the underlying objective in responsibly handling any asbestos containing material.

An estimated 80 per cent of all buildings constructed before 1978 contain asbestos materials. Asbestos can be found in the following materials which are listed merely as examples of asbestos containing materials. The list should not be construed as being all inclusive.

siding	linoleum
roofing materials	floor tiles
pipe insulation	mastics/adhesives
boiler insulation	gaskets
ceiling tiles	plaster
spray applied insulation	

Definitions of Asbestos Containing Material (ACM)

Friable ACM means any material which contains more than 1 percent asbestos by weight and can be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable ACM means any material which contains more than 1 percent asbestos by weight and can not be pulverized under hand pressure. Non-friable ACM is divided into two categories. Category I includes packings, gaskets, resilient floor covering, and asphalt roofing products. Category II is any other non-friable ACM not included in Category I.

Regulated asbestos containing material (RACM) includes the following:

- a. friable asbestos material;
- b. Category I non-friable ACM that has become friable;
- c. Category I non-friable ACM that will be, or has been, subjected to sanding, grinding, cutting, or abrading; and,
- d. Category II non-friable ACM that has a high probability of becoming, or has become, crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Specific Guidance for Fire Departments

During a fire, firefighting personnel are exposed to a wide variety of construction materials, many of which, especially in older buildings, contain asbestos. Firefighters may therefore be at risk for exposure to asbestos and should be fully aware of its adverse health effects. During a fire, air currents can carry asbestos fibers released when hot asbestos is hit with cold water, or as a result of material break-up during structural failure. Also, fire may cause non-friable asbestos materials to be rendered friable. In most cases the wearing of self contained breathing apparatus while fighting fires precludes fiber inhalation. However, firefighters often remove their respiratory protection during the second principal phase of firefighting known as the "overhaul stage" when the fire is mostly controlled and personnel search through the debris to extinguish any remaining embers. It is probable that the exposure to asbestos experienced during or after fighting a fire, particularly during the overhaul stage, represents an important source of asbestos exposure. To minimize the risk of exposure, firefighters should wear respiratory protection during overhaul, even if the fire has been extinguished.

Firefighters should become familiar with the common uses of asbestos in construction and know where the exposure danger is the greatest. A significant risk of exposure occurs when ceilings are pulled down or walls are opened to be sure the fire is extinguished. The Department of Environmental Services (DES) recommends that firefighters wet down walls, ceilings, and pipes before tearing them apart to lessen the possible release of fibers into the air. If exhaust blowers are used, they should be directed to minimize threats to human health. Exposure of personnel to asbestos is often compounded by the fact that asbestos may get on the firefighters protective clothing. Routine attention should be given to ensure that suitable protective clothing is used to minimize the adverse effects of contamination, and the use of asbestos blankets, gloves, and aluminized asbestos suits should be discontinued.

Entry and venting techniques, often practiced on structurally sound buildings prior to demolition, should not be employed without the use of protective equipment if the action involves cutting through any type of asbestos material. Please bear in mind that cutting or chopping through seemingly rigid non-friable asbestos materials such as transite board panels can result in the release of fibers. A specific example of an action with a high probability for fiber release is the use of chain saws to cut entry or vent holes in structures. Air monitoring should be implemented during an asbestos related fire (if possible), and should continue until the site cleanup is complete. Air monitoring locations should be established downwind of the fire.

With proper permits, some fire departments burn buildings slated for demolition for practice purposes. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations require that prior to a facility being intentionally burned for training, all regulated asbestos material, including Category I and Category II non-friable asbestos containing material, must be removed. Failure to remove regulated asbestos materials prior to burning or demolition can result in the release of fibers during the conflagration, and a disposal problem for contaminated residue. DES also advises that after a fire involving either partial or complete loss of the structure, an inspection of the remains should be made to determine whether or not

asbestos materials are present. Special note should be made of parts that were seemingly unaffected by the heat/burn, or are in what appears to be comparatively good condition in relationship to other charred remnants of the structure. This information should be conveyed to the code enforcement officer or other authority involved with the ensuing demolition or renovation efforts. Personnel performing post fire cleanup should be provided with personal protective equipment, selected based on the identified risks.

Another source of asbestos exposure for firefighters can be from deteriorating asbestos in fire houses. A thorough inspection of these buildings should be performed by a qualified asbestos inspector, and any asbestos material found to be in poor repair should be properly repaired or removed.

In incidents where firefighters/equipment have been contaminated by asbestos, decontamination is best accomplished at the scene by washing individuals/equipment with water. In that way, if concentrations to be dealt with during clean up are significant, the asbestos waste will all be in one area. If this is not possible, the equipment and clothing should be washed later, and the waste water passed through a five (5) micron filter which should then be disposed of as asbestos waste. Cleanup activities should ensure that asbestos containing debris is handled in a manner to prevent release of fibers. Because the asbestos fibers are so small, thorough decontamination procedures are needed to prevent the transfer of fibers to remote sites including the home or fire station. Asbestos containing debris should be adequately wet and properly managed for disposal at a facility permitted for that purpose. A personal air monitoring plan should be established for the protection of personnel performing post fire cleanup activities.

A number of steps can be taken to reduce the potential for asbestos exposure among firefighters. The following are some of those steps:

1. Perform a thorough evaluation of work practices and protective equipment.
2. Wear respiratory protective equipment during the "overhaul" stage of the fire.
3. Decontaminate protective clothing (including coats, helmets, boots etc. after an asbestos exposure), personnel, and equipment at the site.
4. Become familiar with common uses of asbestos in construction.
5. Develop an asbestos awareness program.
6. Inspect, and properly remove or manage in place, any asbestos at the fire station.

Further Information

For additional information, contact:

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